

FORMANEK, Jiri

International summer school on symmetry in the physics of elementary particles. Cs cas fys 15 no.3:291-292 '65.

1. Faculty of Technical and Nuclear Physics of the Czech Higher School of Technology, Prague. Submitted November 5, 1964.

24

*ca*

The influence of the dampness of brown coal dust upon explosion. *Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Instituta Khimicheskoy Fiziki* 18, 253 (1953); *Chem. Abstr.* 48, 120.---Exptl. studies show that dampness does not heighten the dangers of spreading an explosion after the explosion has begun.  
Frank Marsh

ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION

[illegible]

PROCESSING AND PROPERTY INDEX

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**F**

4681. DEVELOPMENT OF BROWN AND MINERAL COAL BRIQUETTING WITHOUT BINDING AGENTS AND NEW "DOLNI RYCHNOV" PROCESS FOR BRIQUETTING LIGNITE AND COAL WITHOUT BINDERS. Formanek, J. (Banaky Obzor, July 1949, vol. 3, 97-99; abstr. in Glückauf, 7 Jan. 1950, vol. 86, 37).

The coal is pre-dried and superheated; tar components are activated at high temperatures and finally stabilized by the action of an inert gas to avoid their decomposition. Briquetting takes place at 150°C. Extensive tests made over the last 3 years in a briquette factory at Sokolov with various types of coal have given satisfactory results.

METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

EXIST ONE COPY

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

FORMANEK, J.

"Coal Briquetting" p. 149, Praha, Vol. 34, no. 6, June 1954.

SO: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress

FOREMANEK, J.

"Effect of new methods of work on the fulfillment of the Plan in the North Bohemian  
Brown-Coal Mines."

Uhli, Praha, Vol 3, No 9, Sept. 1953, p. 265

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress

FORMANEK, J.

FORMANEK, J. Present problems in the drying, briquetting, and utilizing of coal in Soviet science and practice. (To be contd.) p. 556

Vol. 5, no. 5, 1956

SOVETSKA VEDA: HORNICTVI-HUTNICTVI.

TECHNOLOGY

Praha, Czechoslovakia

So: East European Accession Vol. 6, no. 2, 1957

FORMANEK, J.

CZOSPOSLOV.KL. / Chemical Technology. Chemical Products H-64  
and Their Applications. Chemical Pro-  
cessing of Solid Fossil Fuels.  
( ) Abs Jour: Ref Zhur-Khizaya, No 3, 1959, 9551.  
Author : Lono, J., Zavoruka, J., Sidlik, P., Patore, E.,  
Malina, E., Boranek, S., Formanek, J., Kise, J.,  
Blodl, S.  
Inst : Not given.  
Title : Concerning the article by Vilka: "A Study of the  
Problem of Complex Chemical Energy Utilization  
of Brown Coal."  
Orig Pub: Puliva, 1958, 36, No 9, 316-320; No 10, 360-364;  
No 11, 378-380; No 12, 413-416.  
Abstract: See Ref Zhur Khiz, 1959, 9430.

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17D



FORLANEK, J.

TECHNOLOGY

periodicals: RUDY Vol. 6, no. 7, Sept. 1958

FORLANEK, J. Dressing of lead-zinc ores in Sweden. p. 317.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 5  
May 1959, Unclass.

FOREMANER, J.

TECHNOLOGY

periodicals: RUBY Vol. 6, no. 12, Dec. 1958

FOREMANER, J. Two-stage hydrocyclones. p. 426.

Monthly List of East European Acquisitions EBAI LC Vol. 8, no. 5  
May 1959, Unclass.

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their H.  
Application. Chemical Processing of Solid Fossil  
Fuels.

Abs Jour : Ref Zhur - Khimiya, II. 10, 1959, 36293

Author : Foremanek, J.

Inst : "

Title : Reprocessing of Lignite of the Sokolov Deposits.

Orig Pub : Uhli, 1958, 3, No. 9, 321-325.

Abstract : Investigatory technico-economical comparisons indicated  
the advantages of briquetting Sokolov's coal for power  
purposes and semicoking and also the expediency of dry-  
ing the coal by vapor under pressure.

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H-115

S/058/62/000/004/012/160  
A058/A101

AUTHOR: Formánek, J.

TITLE: On the Úlehla-Petráš wave equation

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 36, abstract 4A285  
("Chekhosl. fiz. zh.", 1961, VII, no. 8, 545 - 553, English;  
Russian summary)

TEXT: Petráš (RZhFiz, 1956, no. 11, 30891) and Úlehla (RZhFiz, 1958, no. 5,  
9961; 1959, no. 6, 12201) proposed a relativistic wave equation  
having the following general canonical form:

$$(x^\mu D_\mu - ix) \varphi = 0.$$

This equation describes spin 1/2-particles but does not coincide with the Dirac equation. The author investigates separately the Petráš and Úlehla wave equations for an electrically charged spin 1/2-particle. He examines the transformation of these equations into each other, as well as their connection with the conventional Dirac-Pauli equation.

[Abstracter's note: Complete translation]

Card 1/1

FORMANEK, J.

Right-handed and left-handed coordinate systems in the theory of particles with spin  $1/2$ . Chekhosl fiz zhurnal 14 no.9:657-666 '64.

1. Faculty of Technical and Nuclear Physics, Czech Higher School of Technology, Prague 1, Brehova 7.

CZECHOSLOVAKIA

B. FISCHER, D. FRANTIKOVA and J. FORMANEK, Institute of Work Hygiene and Occupational Diseases (Ustav hygieny prace a chorob z povolani) Head (prednost) Dr Prof J. TRISINGER, DrSc; and Communications Research Institute, (Vyzkumny ustav spoju), Chief (reditel) Inz F. DOLEK, Prague.

"Occupational Health Problems in Long-Distance Telephone Operators."

Prague, Pracovní Lékařství, Vol 14, No 10, Dec 1962; pp 471-476.

Abstract [English summary modified]: Comprehensive review of the world literature on the topic: proneness to neurotic lability, sensory (esp. auditory) impairment, autonomic-endocrine disturbances. Authors found negative results in limited studies on blood pressure and skin temperature measurements. They find no justification for considering neuroses as occupational and compensable, but auditory changes are such, however, they are mostly minor in degree. The problems persist, however, and remedial measures are outlined. The present 6,000 Czechosl. operators will not decrease in number until 1965; from then on automation will affect them- to 1,100 in 1980. About 40 worldwide ref's.

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APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000413520004-2

Abs Jour : Ref Zhur - Fizika, No 11, 1958, No 26099

Author : Formanek Karel

Inst : ~~Not Given~~

Title : Acoustics and Architectural Finish of Motion Picture Theatres.

Orig Pub : Filmovy technik, 1958, 6, No 1, 6-7

Abstract : It is noted that it is necessary to make greater use of new acoustic materials, particularly when finishing wide-screen motion picture theaters.

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FORMANEK, V.

Experiences from the economic surveys done at the Hlubina Mine. p. 273.

UHLI (Ministerstvo paliv) Praha, Czechoslovakia. Vol. 1, no. 8, Aug.<sup>1</sup> 1959

Monthly list of East European Accessions (EEAI), Vol. 9., no. 1, Jan. 1960

Uncl.

Z/034/62/000/008/001/004  
E073/E335

AUTHORS: Formánek, Vilem and Mares, Zdeněk, Engineers

TITLE: Verification of the cooling process of a CrNiMo  
steel ingot

PERIODICAL: Hutnicke listy, no. 8, 1962, 559 - 562

TEXT: The manufacture of shafts of electric generators of 100 MW and greater, weighing 100 - 130 t, for which CrNiMo steel with yield points above  $50 \text{ kg/mm}^2$  is used, requires the use of presses with pressures of the order of 10 000 t. Their manufacture in Czechoslovakia is in two stages: casting by ZVIL, Pilsen; transportation to NMKG, Ostrava, inside specially designed "hot buggies" which retain the ingot in the hot state during its transportation, lasting 3-4 days. Before introducing these special "thermal bunkers" the ingots were pre-forged in Pilsen, then cooled down for transportation in the cold state. The first ingot thus cooled developed a longitudinal crack and had to be scrapped. This block was then used as an experimental material for verifying the progress of the temperature during

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Z/034/62/000/008/001/004  
E073/E335

Verification of....

the individual phases of the cooling process and a safe annealing process was worked out, from the results obtained, which could be realized in practice. The composition of the material was as follows: 0.31% C, 0.50% Mn, 0.25% Si, 0.013% P, 0.021% S, 1.55% Cr, 2.22% Ni, 0.47% Mo and 0.14% V. The block was forged from an ingot weighing 105 t into an octangle with an internal diameter of 1 850 mm; a journal for upsetting was forged from the head of the ingot. The block dimensions are shown in Fig.1 and the location of the holes for accommodating the thermocouples is shown in Fig. 2. The process of cooling was as follows:

- 1) charging into the furnace after forging and equalization of the temperature to 850 °C;
- 2) cooling to below 300 °C inside the closed furnace, which was made airtight, and maintaining at this temperature until the temperature had equalized;
- 3) heating to 850 - 870 °C and maintaining at this temperature until equalization was achieved;
- 4) repeating as per (2);
- 5) heating to 650 °C and holding at this temperature until equalization was achieved;
- 6) cooling in the closed and

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Verification of ....

airtight furnace to below 100 °C; 7) storing of the block in a protected spot of the workshop until complete cooling has been achieved. The aim was to verify to what extent and for how long it was necessary to retain the block in the forging furnace (regeneration type 6 750 x 4 200 mm; height of the working space 4 150 mm, with 4 burners fitted along the lateral walls, burning unpurified producer gas of 1 700 kcal/m<sup>3</sup>) to achieve an equalization of the temperature throughout the cross-section at 850 and 650 °C, respectively. A considerable number of the measured values are tabulated. On the basis of the obtained results the following revised process of heating and cooling is proposed: a) cooling from the final forging temperature down to 250 - 300 °C in a tight furnace, the temperature-monitoring being effected by means of contact thermocouples or temperature crayons; b) heating to 850-870 °C for 18 h during which the surface temperature must not exceed 900 °C or drop below 800 °C and then holding for 35 min; c) cooling in the closed and tightened furnace down to 250 - 300 °C; d) heating to 650 °C (measured by a thermocouple lowered to the surface of the block) for 15 h and maintaining at this temperature for at least 60 h;  
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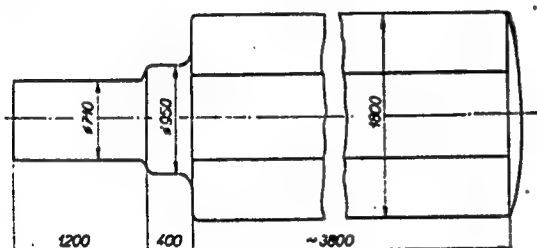
Verification of ....

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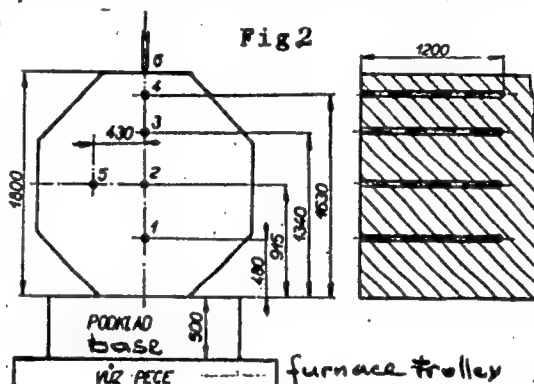
e) cooling in the closed and tightened furnace to achieve a surface temperature below  $100^{\circ}\text{C}$ , which is measured by thermocouples or temperature (indicating) crayons. This revised cooling process proved satisfactory for safe cooling of CrNiMo ingots..  
There are 3 figures and 1 table.

ASSOCIATIONS: NHKG, Ostrava-Kunčice  
Závody V.I. Lenina, Plzeň (V.I. Lenin Works, Pilsen)  
SUBMITTED: November 11, 1961.

FIG. 1:



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FORMANEK, Z.; BAUER, J.

Thermobalance with direct registration. p. 164. (SILIKATY, Vol. 1,  
No. 2, 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

FORMANEC, Z.

S/081/62/000/019/019/053  
B144/B180

AUTHORS: Štovík, Miroslav, Zahradník, Lubomír, Tyroler, Jiří, Vondra-  
ková, Zdena, Formanec, Zdenek

TITLE: Production of concentrates of germanium and other trace ele-  
ments by burning coal in furnace grates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 19, 1962, 340, Abstract  
1/k82 (Czechoslovakian patent 299414, April 15, 1961)

TEXT: When coal is burned in furnaces, almost all the Ge is carried away  
with the finer fractions in the form of volatile compounds. For more com-  
plete removal it is suggested that the coal should be burnt in a reducing  
atmosphere. To this end the entry of primary air from below is restricted to  
a minimum and that of secondary air above the grate is increased. The amount  
of Ge compounds adsorbed in the thin fractions then rises to 80% the Ge con-  
tent of the coal. The combustion gases are led through a cyclone, where  
the largest particles are separated, and then through an electrostatic fil-  
ter and a second cyclone. Alternatively, after separating the large par-  
ticles, the gas is passed through a scrubber, (with either mineral or sili-  
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cone oil), and then conducted through a hydrocyclone and a centrifuge, where the thin fraction is separated. The wash liquid is continuously recycled. Additions of 2-3% by weight sulfur (pyrite) to the coal promote the formation of volatile Ge compounds ( $\text{GeS}$ ,  $\text{GeS}_2$ ). Diagrams of the process are shown. [Abstracter's note: Complete translation.]

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Z/009/61/000/007/001/004  
E112/E135

18.3100  
AUTHORS:

*only 1087*  
Zahradník, Lubomír, Formánek, Zdeněk, Šťovík, Miroslav,  
Tyroler, Jiří, and Vondráková, Zdena

TITLE:

Properties of furnace flue dusts and their use for the  
recovery of germanium

PERIODICAL:

Chemický průmysl, 1961, No.7, pp. 337-341

TEXT:

Coal which is rich in germanium was ashed in a reducing atmosphere and coarser fractions were separated by means of cyclones. Flue dust of finer particle size was recovered by electrostatic separation and this contained up to 1% germanium. Industrial recovery of germanium was considered feasible and therefore laboratory methods for its extraction and the nature of the bond between germanium and the flue dust particles were studied. The flue dust was separated into different fractions according to particle size and the relationship between germanium concentration and particle size was investigated. Germanium contents decreased as the particle size increased and, consequently, main attention was paid to flue dust smaller than  $60 \mu$  (0.12% Ge). During the ashing of coal a number of elements are volatilized and absorbed

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Properties of furnace flue dusts and their use for the recovery of germanium

from the gaseous phase by the flue dust particles. The sorption process was studied by determining the concentrations of the various elements in the original coal and the flue dust. Spectroscopic methods of analysis were used and results are tabulated. On the average, the flue dusts contained between 27 and 33% combustible materials. Their concentration decreased on extraction with 0,2 N-H<sub>2</sub>SO<sub>4</sub>, indicating that they did not consist entirely of carbon. Results for three types of flue dust are tabulated, showing the following: 1) loss of weight of flue dust on calcination; 2) loss of weight of flue dust on calcination, after extraction with H<sub>2</sub>SO<sub>4</sub>; and 3) loss of weight of flue dust on extraction with H<sub>2</sub>SO<sub>4</sub>. Results of spectrographic analyses of flue dusts, H<sub>2</sub>SO<sub>4</sub>-extracts and extraction residues are submitted, listing all elements occurring in the three different fractions in the following concentrations: 1) higher than 1%; 2) 1.0-0.1%; 3) 0.1-0.01%; and 4) lower than 0.01%. The following values are tabulated for germanium: original sample of flue dust, 1 - 0.1%;

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Properties of furnace flue dusts and their use for the recovery of germanium

H<sub>2</sub>SO<sub>4</sub>-extract, 1 - 0.1%; ashing residue of H<sub>2</sub>SO<sub>4</sub>-extract, 0.1 - 0.01%. Extraction methods for germanium from flue dusts, using water, acids, and alkalis, are described. Water extraction recovered about 50% of the available germanium. Extractability with H<sub>2</sub>SO<sub>4</sub> was inversely proportional to the concentration of the latter, (20 N-H<sub>2</sub>SO<sub>4</sub> extracted 64.5% Ge, while 0.05 N-H<sub>2</sub>SO<sub>4</sub> gave 96.7% recovery). On the other hand, extractability with HCl increases with increased concentration. Recovery of Ge by means of HNO<sub>3</sub> was not feasible. The separation of Ge by means of HCl from the coarser fly ashes is also described. An addition of HF (in the form of CaF<sub>2</sub>) is recommended to convert the SiO<sub>2</sub> to SiF<sub>4</sub>, which is driven off by heating. Extraction with weakly alkaline solutions was somewhat inferior to processing with dilute acids. In order to obtain additional information about the isolation of germanium from flue dusts, the volatility of germanium dioxide at different temperatures was studied and results are tabulated. It was found that up to 400 °C germanium was not volatile and was

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Properties of furnace flue dusts ....

assumed to be present as  $\text{GeO}_2$ , easily soluble in alkalies. On the other hand, samples of flue dust, heated under identical conditions, showed poor extractability of Ge by means of dilute sulfuric acid. This is explained by the poor solubility of  $\text{GeO}_2$  in  $\text{H}_2\text{SO}_4$ . It is concluded from laboratory experiments that flue dusts containing 0.3-1.0% Ge present a suitable raw-material for a Czechoslovak germanium recovery industry. Extraction with dilute sulfuric acid or treatment with HCl and distillation as  $\text{GeCl}_4$ , optionally in a stream of HCl, are suggested. The described laboratory methods were utilized for industrial scale production, details of which are to be published later.

There are 7 figures, 12 tables and 12 references: 3 Czech, 7 English and 2 German.

ASSOCIATION: Ústav nerostných surovin, Praha  
(Institute for Mineral Raw-Materials, Prague)

SUBMITTED: January 16, 1961

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Z/009/61/000/012/001/005  
E112/E953

AUTHORS: Zahradník, Lubomír, ~~Formánek Zdeněk~~, Šťovík  
Miroslav, Tyroler Jiří and Vondráková Zdena

TITLE: Recovery of germanium dioxide from flue dusts

PERIODICAL: Chemický průmysl, no.12, 1961, 625-629

TEXT: The only domestic source of germanium in Czechoslovakia are the flue dusts from certain coals (germanium contents range from 0.2 to 0.8%) and the present paper discusses three possible methods of recovery via germanium dioxide: 1) Extraction with water or inorganic solvents, such as  $H_2SO_4$ ,  $HCl$ ,  $HNO_3$ ,  $NaOH$  and  $(NH_4)_2S_x$ . Best results are achieved with 0.05 N- $H_2SO_4$ , yielding up to 97% of the available germanium. Extraction efficiency is closely connected with the physical characteristics of the flue dusts, good recoveries being obtainable only with flue dusts of very fine particle size. Furthermore, only germanium available in soluble form will respond to the method. 2) Chlorination of flue dusts. This process can be operated either at lower temperatures, in presence of steam, or at high temperatures, in presence of air. Compared to the distillation method with  $HCl$ ,  
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yields of germanium are inferior and the recovered products less pure. A further rectification is therefore necessary. The chlorination method, on the other hand, offers the advantage that even very low-content flue dusts can be processed. 3) Direct distillation with HCl. This method is considered the simplest from the technological point of view. It is only suitable for raw materials, containing germanium in a volatilisable form and is not economical for flue-dusts with low germanium content. The method consists of treating the flue dust with HCl, and procedures for the separation of the formed  $\text{GeCl}_4$  are described in detail. So far, this has been effected in two ways: a) Absorption of the gaseous mixture in water, containing 20% HCl. A recovery of 2-13 g germanium per 1 litre is feasible but this is considered unsatisfactory. b) Separation of germanium tetrachloride by condensation. However, considerable amounts of  $\text{GeCl}_4$  are entrained by HCl, and the method is, therefore, rejected as uneconomical. The authors now offer a new procedure for  $\text{GeCl}_4$  absorption, based on the use of non-polar solvents, of which carbon tetrachloride has proved the most suitable. The efficiency of a 0.2%  $\text{GeCl}_4$  solution in  $\text{CCl}_4$

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is given as 97-99.5% at 20°C. As practical processing would require large volumes of  $\text{CCl}_4$  (1500 kg/kg Ge) a two-step absorption process is suggested. A diagram of a laboratory arrangement for the continuous recovery of germanium tetrachloride by the carbon tetrachloride method is shown (Fig.6). The apparatus operates under slight vacuum and has a capacity of 30 kg flue dust per day. The solution of  $\text{GeCl}_4$  in  $\text{CCl}_4$  is preliminarily refined by extraction with concentrated hydrochloric acid, containing 10% nitric acid. Hydrolysis of  $\text{GeCl}_4$  is carried out in the usual way. The experience gained in laboratory trials led to the construction of a semi-technical batch-wise unit, which in two months produced 10 kg germanium dioxide from 1000 kg flue dust. There are 5 tables, 5 figures and 5 references: 2 Soviet-bloc and 3 non-Soviet bloc. The English-language references read as follows: Ref.1: Journal of Metals, 979(1953); Ref.2: Johnson O.H., Chemical Reviews, vol.51, 432 (1952); Ref.5: Aubrey K.V., Nature, vol.176, 2 (1955). ✓

ASSOCIATION: Ústav nerostných surovin, Praha  
(Institute for Mineral Raw Materials, Prague)

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Recovery of germanium ...

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SUBMITTED: January 16, 1961

Fig.6. Legend.

- 1 - mixing vessel, with stirrer, for absorption of flue dust in hydrochloric acid,
- 3,4 - steam-heated boiling tubes,
- 5 - separator,
- 6 - condenser,
- 7 - absorption vessel,
- 8 - absorption column with Raschig rings,
- 10 - separating funnel with  $\text{CCl}_4$ ,
- 9 - condenser, cooled to  $0^\circ\text{C}$ ,
- 11 - reservoir, to which a slight vacuum is applied.

✓  
-

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Z/012/62/000/001/007/007  
E112/E453

AUTHORS: Formánek, Z., Dykast, J.

TITLE: An automatic transistorized recording balance for simultaneous differential and gravimetric thermal analyses

PERIODICAL: Silikáty, no.1, 1962, 113-118

TEXT: The described instrument was designed to record simultaneously, by means of two independent line recorders, differential and gravimetric thermal-analyses-graphs from a single specimen. It was constructed specially for serial work, and is simple to operate and to service. The instrument is capable of producing five complete differential and gravimetric analyses in an 8-hour day and for a temperature range up to 1000°C, with a temperature increment of 14°C/min. The change in weight is recorded by means of a germanium photo-diode and is compensated by drawing the magnetic core into the solenoid. The differential voltage is recorded by means of a system galvanometer-photodiode-amplifier, the latter having a very strong regenerative feedback at the input of the system. The instrument includes: four vertical

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mutually interchangeable furnaces, one thermobalance, line recorders, galvanometers, photocells, transistor amplifiers, indicators and relay control systems. The operation of the instrument is described under five main headings:

1) Control of heating. A linear increase in temperature of the system is safeguarded by maintaining a constant temperature difference of two thermocouples, one of which is placed inside, the other on the surface, of the reference specimen. The voltage difference between the thermocouples is fed to a mirror galvanometer which regulates (via a photocell, transistor amplifier and a polarized relay) a relay controlling the output of the furnace.

2) Recording of differential thermal analysis graphs. Temperature differences between the standard and the sample (measured as voltage differences between the thermocouple) are fed to another mirror galvanometer, the positional change of which is sensed by a photocell. Its signal is amplified by a transistor and the output is fed to a line recorder. The sensitivity of the system is approximately 25 times the required value and, therefore, a negative feedback is introduced.

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3) Recording of temperature. Voltage across the thermocouple is compared with the voltage across a voltage divider tapped off by means of an Ericson step selector; thereby each step corresponded to a temperature rise of 100°C. The voltage difference is indicated by a profiled pointer; when in the zero position the pointer screens the photodiode, which is located inside the instrument behind a hole drilled into the scale and illuminated from outside. The photodiode controls the transistor amplifier and an auxiliary relay which shorts the recording instrument for about 2 sec and then shifts the selector to the next position. As the temperature increases, pulses are fed to the selector until equilibrium is reached. When the desired temperature is reached and measured, the selector switches off all the circuits and a buzzer is put into operation. Reversion of the selector to the zero position is by push button which operates a vibrating relay of a frequency of about 5 c/sec; this is automatically disconnected as soon as the zero value is reached.

4) Recording of the thermogravimetric graphs. The deflection of the balance beam is sensed by a photocell, placed in front of the

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pointer to which an opaque flag is attached. In null position, the photocell is screened off by the flag. The photocell output is fed via a transistor amplifier to a feedback circuit and the recording instrument. An electromagnetic force (solenoid with permanent magnet) is used as null point restoring system. A permanent magnet rod is suspended half way into a solenoid from the weighing pan of the balance and the force acting upon it is directly proportional to the current in the solenoid and, within certain limits, is independent of the position of the magnet. The polarity of the current is so chosen that it acts against the deflection of the balance beam. The current through the solenoid is recorded by means of a compensating line recorder.

5) Placing and arrangement of sample. Standard and sample were placed in two platinum crucibles on top of each other and housed in a ceramic tube.

Two diagrams are included which show the balance assembly and the arrangement of sample and standard in ceramic tube, also a circuit diagram. There are 3 figures.

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E112/E453

ASSOCIATION: výzkumný ústav pro hnědé uhlí v Mostě  
(Brown Coal Research Institute, Most)

SUBMITTED: February 12, 1961

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FORMANEK, Zd.; DYKAST, J.

Recent use of electric elements for automatic thermal analysis.  
Silikaty 6 no.1:119-124 '62.

1. ~~W~~skumny ustav pro hnede uhli v Moste.

34687

Z/009/62/000/002/001/002

E112/E453

183100

AUTHORS: Zahradník, Lubomír; Formánek, Zdeněk; Štovík, Miroslav;  
Tyroler, Jiří; Vondráková, Zdena

TITLE: Refining of germanium dioxide

PERIODICAL: Chemický průmysl, no.2, 1962, 60-63

TEXT: For semiconductors extremely pure germanium of 99.9999999999% purity, usually called "eleven nines", is required. The production of this pure metal, carried out by reduction of germanium dioxide and zone refining of obtained germanium, is economical only if an oxide with at least three nines is used as starting material. Therefore, germanium dioxide is refined for the elimination of various contaminants, above all of arsenic. The following preliminary refining methods were studied on a laboratory scale: 1) elimination by reduction with Zn, Al or SnCl<sub>2</sub>; germanium tetrachloride is unaffected by the above reducing agents, while AsCl<sub>3</sub> is reduced to arsenic; 2) absorption of AsCl<sub>3</sub> and GeCl<sub>4</sub> in carbon tetrachloride, followed by oxidative extraction with HCl and HNO<sub>3</sub>. In this procedure AsCl<sub>3</sub> is oxidized to the water-soluble H<sub>3</sub>AsO<sub>4</sub> which can be extracted with Card 1/2

Z/009/62/000/002/001/002  
E112/E453

Refining of germanium dioxide

water; 3) extraction of crude  $\text{GeCl}_4$  with  $\text{HCl} + \text{HNO}_3$ ;  
4) separation by fractional distillation; 5) fractional  
distillation with simultaneous oxidation or reduction. The  
authors have now selected the distillation procedure, combined  
with absorption in  $\text{CCl}_4$  as a basis for further experiments on a  
semi-technical scale. The purity of  $\text{GeO}_2$  obtained after  
hydrolysis of the distillation absorbate in  $\text{CCl}_4$  was 99.9%, which  
is considered satisfactory in view of the fact that ordinary glass  
apparatus and ordinary distilled water were being used. The  
material was further refined by oxidative distillation with  $\text{HCl}$   
and  $\text{HNO}_3$ , using an electrolytic heating arrangement. (Heating in  
an oil bath proved unsatisfactory because of settling of  $\text{GeO}_2$ .)  
The degree of refining was found adequate for the final zone-refining  
process. It is submitted that further improvements in refining  
could be achieved by using silica apparatus for the hydrolysis and  
hard glass for the distillation. There are 2 figures and 3 tables.

ASSOCIATION: Ústav nerostných surovin, Praha  
(Institute for Mineral Raw Materials, Prague)

SUBMITTED: January 16, 1961  
Card 2/2

S/001/63/000/001/048/061  
B144/B186

AUTHORS: Tyroler, Jiří, Formánek, Zdeněk, Vondráková, Zdena,  
Zahradník, Lubomír, Štovík, Miroslav

TITLE: Production of pure germanium dioxide from germanium  
concentrates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1963, 347, abstract  
1L38 (Czechosl. patent 101148, October 15, 1961)

TEXT: Ge concentrates are distilled continuously with concentrated HCl  
(ratio 1 : 1 - 2) with simultaneous bubbling of  $\text{Cl}_2$  (gas) through the  
solution or addition of oxidants ( $\text{K}_2\text{Cr}_2\text{O}_7 + \text{H}_2\text{SO}_4$ ). The  $\text{GeCl}_4$  vapors  
together with HCl, vapors  $\text{Cl}_2$  and impurities are washed out of the gas  
mixture by organic solvents ( $\text{CCl}_4$ ); then, the  $\text{GeCl}_4$  dissolved in the  
organic solvent is washed with HCl (acid) and hydrolyzed. Example. The  
apparatus comprises 2 containers with agitators of 70 l capacity (the  
mixture is tapped from one container, while at the same time the other  
Card 1/2

Production of pure germanium ...

S/081/63/000/001/048/061 ..  
B144/B186

tank is filled), a metering pump, a cooking boiler, a foam separator and an absorber. In the containers, the mixture of 25-30 kg concentrate and 50 kg HCl (acid) is prepared. The absorber is filled with  $\text{CCl}_4$ . The operation of the metering pump and the heating of the boiler is controlled in such a way that the foam entering the separator has a temperature of  $100^\circ\text{C}$ . From the separator the suspension is drained-off to waste, but the vapors are led into the absorber, from which  $\text{GeCl}_4$  dissolved in  $\text{CCl}_4$  is drawn off intermittently or continuously and hydrolized thrice with distilled water. The product contains 0.005 - 2% As and is a suitable raw material for semiconductors. [Abstracter's note: Complete translation.]

Card 2/2



FORMANIAK; J

25  
4  
✓ 4176. VARIABLE-FREQUENCY OSCILLATOR OF HIGH  
FREQUENCY-STABILITY. S. BIZKA, R. KOTKIE and J. FORMANIAK.  
Arch. elektrotech. (Warsaw), Vol. 5, No. 4, 753-67 (1958); in Polish.  
An oscillator based on the Gourlet-Clapp circuit is described  
and a detailed circuit diagram is given. Inductance tuning, thermal  
compensation, automatic amplitude control and stabilization of  
supply voltage is used. Following data are provided: frequency  
range 1.9-3 Mc/s; frequency-temperature coefficient  $4 \cdot 10^{-6}$  per  
deg C; frequency-voltage coefficient  $1 \cdot 10^{-6}$  for supply voltage  
changes of  $\pm 10\%$ ; frequency fluctuations over one hour less than  
 $3 \cdot 10^{-6}$ .  
W. Bezdol

Ran  
JYP

*FORMANIAK Jozef*

POLAND/Radio Physics - Generation and Transformation of Radio  
Frequency Oscillations

I-3

Abs Jour : Ref Zhur - Fizika, No 5, 1958, No 11286

Author : Nowak Romuald, Formaniak Jozef

Inst : Not Given

Title : Stable Oscillator Tunable Over a Broad Frequency Range

Orig Pub : Zesz. nauk. Politechn. warsz., 1957, No 33, 149-151

Abstract : Brief description and circuit of an oscillator, tunable over  
a range of 1.5 to 3 Mc and having a short-period frequency  
stability of  $\pm 3 \times 10^{-6}$ .

Card : 1/1

KHORVAT, M. [Horvath, M.]; ~~FORMANIK, Ja.~~ [Formanik, J.]

Effect of small concentrations of trichloroethylene on the higher nervous activity of rats under long-term experimental conditions. Zhur. vys. nerv. deiat. 9 no.6:916-921 N-D '59. (MIRA 13:9)

1. Department of Physiology of Higher Nervous Activity, Institute of Labor Hygiene and Occupational Diseases, Prague, Czechoslovakia.  
(ETHYLENE) (CONDITIONED RESPONSE)

DRDA, Karel, inz. FORMANKOVA, Hana, promovany fyzik.

Removal of ferromagnetic impurities from paper pulp suspensions.  
Sbor cel pap 8:169-190 '63.

! CZECHOSLOVAKIA

J. DUBOVSKY, E. DUBOVSKA and J. KORMANNOVA, Third Internal Medicine Clinic of Faculty of General Medicine (III. interní klinika fakulty všeobecného lékařství) Head (prednosta) Academician J. CHLAPAT, Prague.

"High Excretion of Dicarboxylic Alpha-Keto-Acids in Urine."

Prague, Časopis Lékařů Českých, Vol 102, No 10, 8 Mar 63; pp 275-276.

Abstract: Study of urinary keto acids in 300 persons revealed unusually high levels in several specific conditions. High alpha-ketoglutaric acid levels in a number of patients with diabetes indicate a possible Krebs cycle metabolic defect, heretofore not thought to be present in man. Graph, table; 1 Czech and 5 Western references.

11/1

DUBOVSKY, J.; DUBOVSKA, E.; FORMANKOVA, J.

Imidazolactic acid in the urine. Cas. lek. Cesk. 104 no.44:  
1216-1221 5 N '65.

1. Laborator pro endokrinologii a metabolismus pri III. interni  
klinice fakulty vseobecneho lekarstvi Karlovy University v Praze  
(reditel akademik J. Charvat). Submitted November 1964.

FORMANIAK, Jozef, mgr inż.

Two-channel digital recorder of static and quasi-static stresses. Lacznosc Wroclaw 5:174-176 '62.

1. Instytut Lotnictwa, Warszawa.

DUBOVSKY, J.; FORMANKOVA, J.; DUBOVSKA, E.

Hydroxylysines in the urine in osteopathies with marked changes in the bone matrix. Cas.lek.cesk. 103 no.7:187 14 F'64.

1. III. interni klinika fakulty vseobecneho lekarstvi  
KU v Praze; prednosta: akademik J.Charvat.

\*



DUBOVSKY, J.; PACOVSKY, V.; FORMANKOVA, J.

Qualitative changes in the plasma amino acid spectrum in Recklinghausen's disease of bone. Cas. lek. cesk. 103 no.47:1316-1317 20 N '64.

1. Laborator pro endokrinologii a metabolismus pri III. interni klinice fakulty vseobecneho lekarstvi Karlovy University v Praze, (vedouci akademik J. Charvat).

CZECHOSLOVAKIA

VINAR, O.; BASTECKY, J.; FORMANKOVA, M.; Psychiatric Research Institute, Prague - Bohnice. /Original version not given/.

"Propericiazine in Schizophrenic Psychoses."

Prague, Activitas Nervosa Superior, Vol 8, No 4, Nov 66, pp 453 - 455

Abstract: Propericiazine is a phenothiazine compound with a piperidine side chain, and belongs to the same group as thioridazine and mepazine. It is sold under the trade name Neuleptil. Tests with the use of the drug in the treatment of schizophrenic psychoses under continuous controlled conditions at the Psychiatric Research Institute at Prague are described. 45 patients were used in the trial; the duration of the disease varied between 0 weeks and 11 Years. The daily dose used was 5-15 mg/day at the beginning and 40-45 at the end of the treatment. After 6 weeks 23 patients could be discharged, 10 improved, 9 did not, and 3 were worse. Sociability, appearance and speech are most markedly improved. Best results were obtained with non-paranoid, hebephrenic and simplex forms of schizophrenia. Side effects are quite unpleasant; blood counts and liver were not affected. 4 Figures, 1 Table, no references. Submitted at the 8th A. P. M. at Jesenik 18-22 Jan

FORMANOWICZ, M.

"Chipwood for Furniture Production", p. 5, (PRZEMYSŁ DRZEWNY, Vol. 5, No. 11, Nov. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

FORANOWICZ, M.

"New Trends of Finishing Furniture with Polish", p. 12, (PEZEMIEL DRZEMTY, Vol. 5, No. 12, Dec. 1954, Warszawa, Poland)

SO: Monthly list of East European Accessions, (SERIAL), LG, Vol. 4, No. 5, May 1955, Uncl.

FOPMANOWICZ, M.

Technology of furniture spraying with nitrolacquer, p. 10. (PRZEMYSŁ DRZEWNY, Warszawa, Vol. 6, no. 3, Mar. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. <sup>6</sup>1, <sup>2</sup>Jan. 1955, Uncl.

FCRMANCOWICZ, M.

FCRMANCOWICZ, M. The finishing of furniture . p. 321.

Vol. 6, No. 11, Nov. 1955.

PRZEMYSŁ INŻYNIERY.

TECHNOLOGY

Warszaw, Poland

So: East European Accession, Vol. 5, No. 5, May 1956

FORMANOWICZ, Mieczyslaw

Polyester lacquers in the furniture industry. Pt. 1. Przem drzew 11  
no.9:12-14 '60.

FORMANOWICZOWA, Hanna

Influence of some medical plant compounds upon the germination of seeds. Wiadom botan 6 no.4:333-338 '62.

1. Instytut Przemyslu Zielarskiego, Poznan.



FORMANOWICZOWA, Hanna

Studies on early spring sowing of medicinal plant seeds in the field. Inst przem ziel Biul 8 no.4:181-206 D '62.

1. Zakład Botaniki Stosowanej i Aklimatyzacji, Instytut Przemysłu Zielarskiego, Poznań. Kierownik: dr J. Kozłowski.

X

FORMANOWICZOWA, Hanna; KOZLOWSKI, Jan, dr.

Experiments in propagating *Lilium martagon* L. from seeds and scalelike leaves of the bulbs. Inst przem ziel Biul 9 no.1/2:60-65 Mr-Je '63.

1. Zaklad Botaniki Stosowanej i Aklimatyzacji, Instytut Przemyslu Zielarskiego, Poznan. Kierownik: dr J. Kozlowski.

FORMANOWICZOWA, H.; KOZLOWSKI, J.

Tentative tests of the vitality of seeds of medical plants with the use of 2,3,5-triphenylotetrazole chloride. Wiadom botan 8 no. 3/4; Suppl; Biul ogrod botan no.3/4:244-247 '64.

1. Department of Applied Botany and Acclimatization of the Industrial Institute of Herbs, Poznan.

CZECHOSLOVAKIA/Pharmacology. Toxicology.

V

Abs Jour: Ref. Zhur. - Biol., No 22, 1958, 103017

Author : Formansk, Jaroslav

Inst : -

Title : Protective Inhibition in Rats After Intoxication  
with Trichlorethylene.

Orig Pub: Pracovni lekar, 1957, 9, No. 6, 518-524

Abstract: The dynamics of the processes of the cerebral  
cortex in intoxication with trichlorethylene (I)  
in concentrations of 1760-30,000 gamma/l was  
investigated in 5 rats. A fast exhaustion of  
the cortical cells, which conditions an inhibi-  
tion of the reflex to sound stimulus, was dis-  
covered. The change of the reflex to light was  
limited by the increase of the index of the

Card 1/2

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CZECHOSLOVAKIA/Pharmacology. Toxicology.

V

Abs Jour: Ref. Zhur. - Biol., No 22, 1958, 10317

latent period of this reflex by 75%. The application of narcotic and subnarcotic concentrations of I led to phenomena analogous to the effect of other toxic substances on HNA. -  
A. I. Marin

Card 2/2

FORMANSKI, J.

FORMANSKI, J.

From above or from below, p. 18. (GOSPODARKA. ZBOZOWA, Warszawa, Vol. 6, no. 2, Feb. 1955)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4, Jan. 1955, Uncl.

FORMANSKI, J.

What the Party Economic Conference gave to the Affiliated Mills in Leszno, p. 20.  
(GOSPODARKA ZBOZOWA, Warszawa, Vol. 6, no. 2, Feb. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, Jan. 1955,  
Uncl.

FORMANSKI, J.

Grain and floor pests in a mill, p. 22. (GOSPODARKA ZBOZOWA, Warszawa, Vol. 6, no. 2, Feb, 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4, Jan. 1955, Uncl.



FORMANSKI, J.

How the Kalisz millers work, p. 24. (GOSPODARKA ZBOZWA, Warszawa, Vol. 6, no. 3, Mar. 1955.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4, Jan. 1955, Uncl.

FOIA b1, 3.

When will the rationalizers' clubs begin their activities? p. 15.  
KOSPODANKA LPOZNA, Jerusalem, Vol. 3, no. 6, June 1955.

SC: Monthly List of East European Accessions, (MEML), IS, Vol. 4, no. 10, Oct. 1955,  
Uncl.

FORMANSKI, J.

To tighten collaboration between the readers and the periodical.

p. 20  
Vol. 6, no. 7, July 1955  
GOSPODARKA ZBOZOWA  
Warszawa

AGRICULTURE

SO: Monthly List of East European Accessions (EFAL), LC, Vol. 5, no. 2  
Feb. 1956

FORMANSKI, J.

This is not technical progress. p. 29. GOSPODARKA ZBOZOWA.  
Vol. 7, No. 5, May 1956. Warszawa.

East European Accessions List (EEAL) Library of Congress  
Vol. 5, No. 11, August 1956.

FORMANSKIY, A.K., inzh. (Novokuznetsk)

Underwater concreting under winter conditions.

Prom. stroi. 40 no.9:24-27 '62. (MIRA 15:11)

(Underwater concrete construction—Cold weather conditions)

FORNAS, I.

We beat with pent. p. 6.

ROLNIK SPOKUBIMŁA. (Centrala Rolniczej Spółdzielni "Samopomoc Chłopska")  
Warszawa, Poland. Vol. 8, no. 30, July 1965.

Monthly list of East European Accessions (NEAI) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

FORMAS, F.

FORMAS, F. The utilization of peat has finally begun. p. 6.

Vol. 9, no. 22, May 1956

ROLNIK SPOLDZIELCA

AGRICULTURE

Poland

So: East European Accession, Vol. 6, No. 5, May 1957

ROZMAS, L., Jot. n.

They have fulfilled the plan of digging peat in Warszawa Wojzodeship and Slupsk, n. 6.

(POLNIK SPOLOZUMICA. Vol. 2, no. 31, July 1956, Warszawa, Poland)

SO: Monthly List of East European Accessions (SEAL) LC. Vol. 6, no. 12, Dec. 1957.  
Encl.



LUKASIAK, B.; BACIA, T.; FORMAS, J.

Studies on the mechanism of scleroderma. Behavior of sensory chronaxy in relation to pathological changes in various segments of the nervous system. Przegl. dermat. 48 no.8/10:229-234 '61.

1. Z Kliniki Dermatologicznej A.M. w Warszawie Kierownik: Prof. dr S. Jablonska.

(SCLERODERMA physiol) (SENSATION)

*1956/11/11, Vol. 1*  
RICHENKO, N.I., kandidat meditsinskikh nauk (Kiyev); PETROVSKAYA, N.V.  
(Kiyev); FORMAZYUK, V.I. (Kiyev)

Biomycin for treating acute dysentery in adults. Klin.med. 34  
no.7:91 J1 '56. (MLRA 9:10)

1. Iz klinicheskogo otdeleniya (sav. - prof. G.I.Khomenko) Instituta  
infektsionnykh bolezney AMN SSSR (dir. - chlen-korrespondent AMN  
SSSR prof. I.L.Bogdanov)  
(AURBOMYCIN) (DYSENTERY)

P/528/61/001/000/006/007  
D204/D307

AUTHORS: Kupryszewski, Gotfryd and Formela, Małgorzata

TITLE: Pentachlorophenyl esters of amino acids. IV.  
The application of pentachlorophenyl esters  
of N-shielded amino acids to the synthesis of  
peptides

SOURCE: Danzig. Wyższa Szkoła Pedagogiczna, Zeszyty  
naukowe. Matematyka, fizyka, chemia, v. 1,  
1961. Danzig. 1962, 99 - 101

TEXT: This article is a continuation of previous  
studies (Roczniki Chem., 35, 931 (1961) : 35, 595 (1961) : 35,  
1533 (1961) ) in which a method for the preparation of active  
pentachlorophenyl esters (A) of N-shielded amino acids was  
developed. In the present work, the aminolysis of A was carried  
out in tetrahydrofuran or dioxan, using methyl or ethyl esters  
of other amino acids. Compounds A were found to be efficient  
acylating agents, reacting at room temperature to give 75-98%  
yields of the corresponding esters of N-shielded dipeptides.  
Card 1/2

Pentachlorophenyl esters ...

P/528/61/001/000/006/007  
D204/D307

The following compounds were obtained: the ethyl esters of carbobenzoxyglycylglycine, carbobenzoxyglycyl-DL-phenylalanine, carbobenzoxyglycyl-L-tyrosine, carbobenzoxy-DL-alanylglycine, carbobenzoxy-L-leucylglycine, carbobenzoxy-DL-phenylalanylglycine, phthalyl-DL-alanylglycine, and phthalyl-DL-leucylglycine, and the methyl esters of phthalyl-DL-phenylalanylglycine and tosyl-DL-valylglycine. The use of water-miscible tetrahydrofuran and dioxan is necessary in view of the relatively low solubility of the pentachlorophenyl esters in ethyl acetate; despite the consequent difficulties in purifying the reaction products, the method proposed is essentially very simple. There is 1 table.

ASSOCIATION: Katedra Chemii Organicznej Wyższej Szkoły  
Pedagogicznej, Gdańsk (Department of Organic  
Chemistry, Higher School of Education, Gdańsk)

SUBMITTED: June 25, 1961

Card 2/2

KUPRYSZEWSKI, Gotfryd; FORMELA, Malgorzata

On aminoacid chlorophenyl esters. III. N-protected amino acid penta-chlorophenyl esters. Rocz chemii 35 no.5:1533-1536 '61.

1. Department of Organic Chemistry, School of Education, Gdansk.

KUPRYSZEWSKI, Gotfryd; FORMELA, Malgorzata

Amino acid chloropheryl esters. Pts. 6-7. Matem fiz chem  
Gdansk 2 127-134 '62.

1. Department of Organic Chemistry, School of Education, Gdansk.

KUPRYSZEWSKI, Gotfryd; FORTELA, Malgorzata

Depsipeptides. Pt.3. Roczniki chemii 37 no.2:161-165 '63.

1. Department of Organic Chemistry, Normal School, Gdansk.

FORMICHEV, V.

Credit

Broadening of credit relations within the economy. Den. i kred. No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, March 1952. Unclassified.



BOBROVNIK, I. I.

"Archids of Tree and Brushwood Varieties of the Steppes of the Eastern Ukrainian SSR and Certain Regularities in Their Distribution." Gard Biol Sci, Moscow State Pedagogical Inst imeni V. I. Lenin, Moscow, 1954. (KL, No 5, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13) SO: Sum. 598, 29 Jul 55

FOMICHEVA N. I.

USSR/ Medicine - DDT Disinfection

Nov 49

"Effectiveness of DDT and Hexachlorane Preparations in Disinfecting Railroad Passenger Cars," N. I. Mitikin, N. I. Fomicheva, Dept of Disinfection, Cer Sci Res Lab of Hygiene and Epidemiol, Min of Transp USSR, 2 1/2 pp

"Gid 1 San" No 11

Gives statistics on disinfecting passenger cars by kerosene, 5% DDT in kerosene, DDT dust (10%) and hexachlorane dust (5-7%) in talcum. Ten-percent DDT proved more Effective in cars with upholstered seats--redding them of bedbugs for three trips (60) days--than in cars with hard seats. It was also more effective than disinfection with hexachlorane.

Pa 151T38

F FORMIN. 1. Ya.

4657. EVALUATION OF PROPERTY OF COAL TO BE BENEFICIATED. Formin, I Ya (Stal. 1948, vol. 8, 389-397; abstr. in chem.abstr. 1950, vol. 4, 216). For evaluation of this property is suggested the resultant of 3 indices (a) a theoretical index (Kt) obtained from the results of a laboratory gravity analysis, (b), a practical index (Kp) or the index of beneficiation actually obtained with industrial equipment, and (c) an efficiency index (n) of apparatus of process.  $Kt = \frac{V(100 - 80)}{K(100 - 80)}$  where V is the yield of concentrate when coal is beneficiated in heavy liquids. K is the ash content of the concentrate and 80 is the ash content of the original coal.  $R.P. = \frac{Kp}{Kt} \cdot 100$  where the meaning of the symbols is analogous to the preceding; subscript a indicates that they are obtained in industrial apparatus. The application of this method of evaluation is discussed.

ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION

FROM BOMBY

011117 DEC 01V 151

Increasing Wear Resistance and Prolonging the Service Life of Parts With Large Cross-Section Area by Surface Hardening After Rapid Heating in Furnaces

Povysheniye iznosostoykosti i sroka sluzhby mashin. t. 2 (Increasing the Wear Resistance and Extending the Service Life of Machines. v. 2) Kiev, Ird-vo AN UkrSSR, 1960  
296 p. 3,000 copies printed. (Series: Its: Trudy, t. 2)

Sponsoring Agency: Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Tsentral'noye i Kiyevskoye oblastnoye pravleniye. Institut mekhaniki AN UkrSSR.

Editorial Board: Resp. Ed.: B. D. Grozin; Deputy Resp. Ed.: D. A. Draygor; N. P. Braun, I. M. Faynerman, I. V. Krapel'skiy; Scientific Secretary: L. L. Vankush; Ed. of v. 2: Ya. A. Samokhvalov; Tech. Ed.: N. P. Zakhidina.

NOTE: The collection contains papers presented at the Third Scientific Technical Conference held in Kiev in September 1957 on problems of increasing the wear resistance and extending the service life of machines. The conference was sponsored by the Institut stroitel'noy mekhaniki AN UkrSSR (Institute of Structural Mechanics of the Academy of Sciences Ukrainian SSR), and by the Kiyevskoye oblastnoye organizatsiya nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti (Kiev Regional Organization of the Scientific Technical Society of the Machine-Building Industry).

FORMIN, N.V.

SERGEYENKO, I.A.; FORMIN, N.V.

New speedy method for electroplating. Med.prom. no.1:42 Ja-Mr '55.

(MIRA 8:5)

(NICKELPLATING)

IVANOVA, T.G.; FORMIN, N.V.

Experiment in the use of radio centers containing KRU-2  
and KRU-10 equipment. Vest.sviazi 20 no.6:25-26  
Je '60. (MIRA 13:7)

1. Starshiy inzhener Glavnogo upravleniya radiofikatsii i  
vmutrirayonnoy elektrosvyazi Ministerstva svyazi RSFSR (for  
Ivanova). 2. Nachal'nik Krasnoyarskoy krayevoy direksii  
radiotranslyatsionnykh setey (for Formin).  
(Wire broadcasting) (Radio operators)

AUTHOR: V. V. Formin, S. P. Vorobev, M. A. Andreeva

TITLE: The Investigation of Complex Plutonium Oxalates by the Polarographic Method

PERIODICAL: Yüan Tzü Neng, 1958, Vol 3, Nr 5, pp 450-456

ABSTRACT: The composition and stability of complex ions of tri- and tetravalent plutonium in oxalate solution were investigated by the authors using the polarographic method. The process is described. The ions of  $\text{Pu}(\text{C}_2\text{O}_4)_4^{-4}$  (predominate) and  $\text{Pu}(\text{C}_2\text{O}_4)_3^{-3}$  were formed in potassium oxalate solution with pH 3.5-6.  $\text{Pu}^{+4}$  gave a well reverse reaction wave which is suitable for the quantitative determination of plutonium by the polarographic method. In 1M potassium oxalate solution, the oxidation-reduction potential of the above reaction is 0.205V (corresponding to a saturated calomel electrode at 25 C). At pH 6-8, the authors discovered that two  $\text{Pu}^{+4}$  complexes were simultaneously present. The authors determined the instability constants of  $\text{Pu}(\text{C}_2\text{O}_4)_4^{-5}$  from the data on the solubility of  $\text{Pu}(\text{C}_2\text{O}_4)_3$  and the polarographic method is:  $K_{\text{Pu}(\text{C}_2\text{O}_4)_4^{-5}} = 2.4 \times 10^{-12}$ ,  $K_{\text{Pu}(\text{C}_2\text{O}_4)_3^{-3}} = 2.2 \times 10^{-11}$ ,

Card 1/2

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The Investigation of Complex Plutonium Oxalates (Cont.) CHICOM/28-3-5-6/20

$K_{Pu(C_2O_4)_4} = 33 \times 10^{-28}$ . There are 4 figures 5 tables and  
9 non-Chicom references.

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1ST AND 2ND COPIES															3RD AND 4TH COPIES														
PROCESSES AND PROPERTIES INDEX																													
<div style="position: absolute; top: 10px; right: 10px; font-size: 2em; font-weight: bold;">16</div> <div style="position: absolute; top: 150px; left: 10px; font-size: 1.5em;">FORMINA, A.M.</div> <div style="position: absolute; top: 300px; left: 300px; text-align: center;"> <p>Comparative Evaluation of Rotational and Capillary Viscometers for Determination of Viscous Properties of Lubricating Oils in the Low-Temperature Region. (In Russian.) V. L. Val'dman and A. M. Formina. Zavodskaya Laboratoriya (Factory Laboratory), v. 16, May 1949, p. 547-549.</p> <p>Date of comparative analysis indicate that viscos- ity values obtained using both types of viscosi- meter will coincide only in the temperature region where the oil does not yet possess thixotropic properties. Rotational types are recommended for low-temperatures (-40 to -60°C.) investigations.</p> </div>																													
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Authors                : Formozov, A. A.

Title                  : Finding human remains in Crimea during excavation

Periodical             : Priroda, 43/7, 109 - 112, July 1954

Abstract               : The finding of remains of an ancient people in Crimea, believed to have lived during the period of the Neanderthal man, is described. An analysis is given of the peculiarities of the skeletons and the significance of the implements used by the people. Illustrations.

Institution            : ....

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